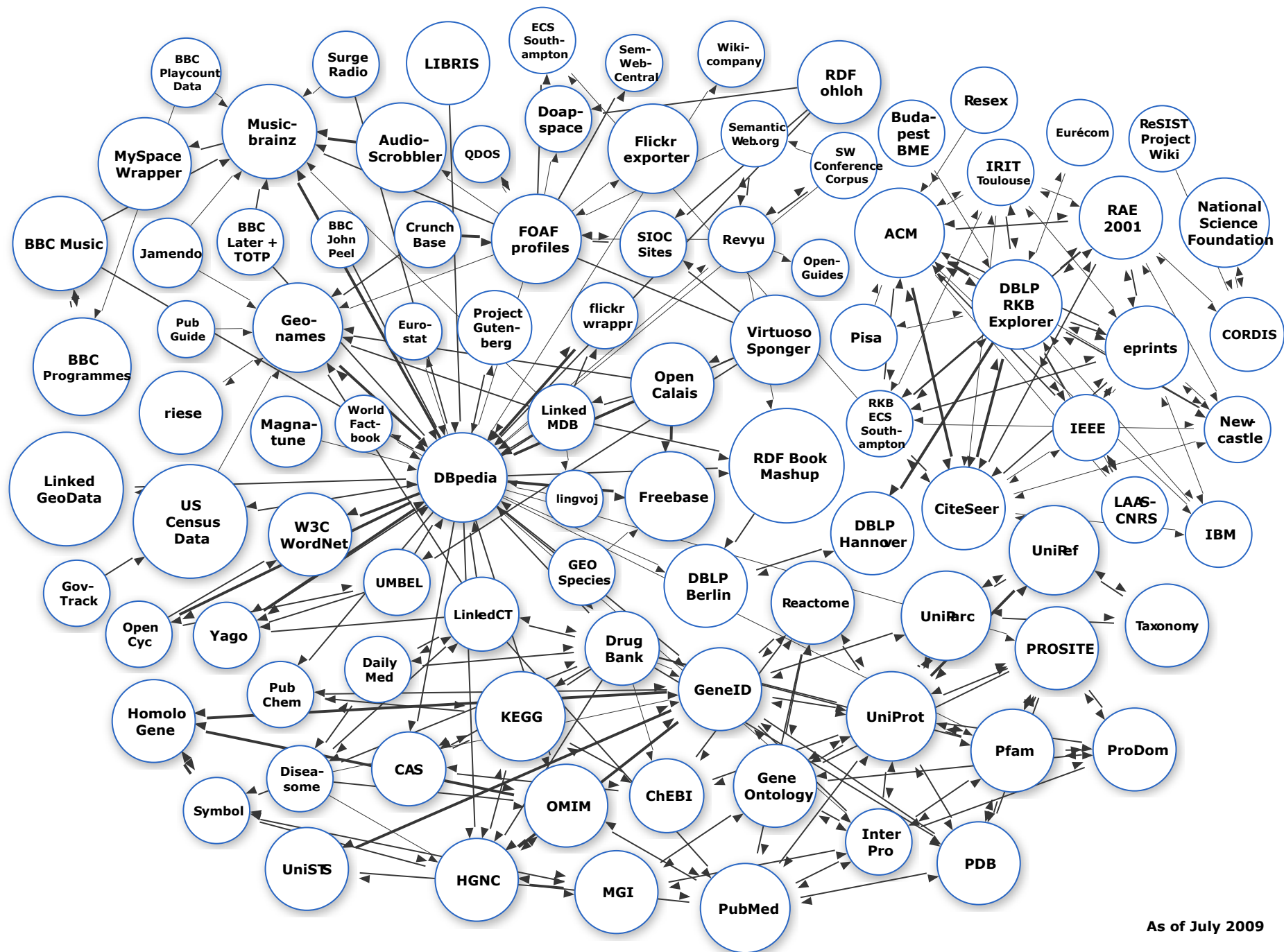




Providing  
Genius

# Tracker: Semantic Data Storage for Mobile Devices

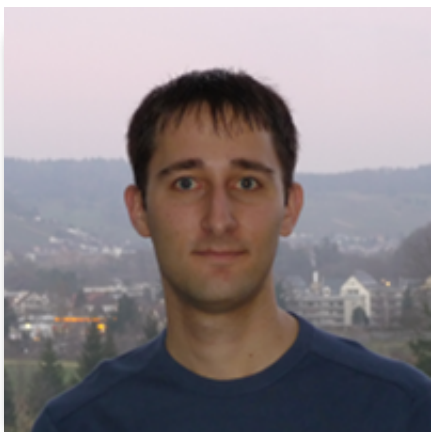




# Tracker

MeeGo<sup>TM</sup>







yeah, rest up  
don't forget to let stephen know when you were ill

**karl@codethink.co.uk**

05:10

yeah I'll give him the break down when I get back



**Rob Taylor**

05:11

good plan :\_  
have a good rest

**karl@codethink.co.uk**

08:13

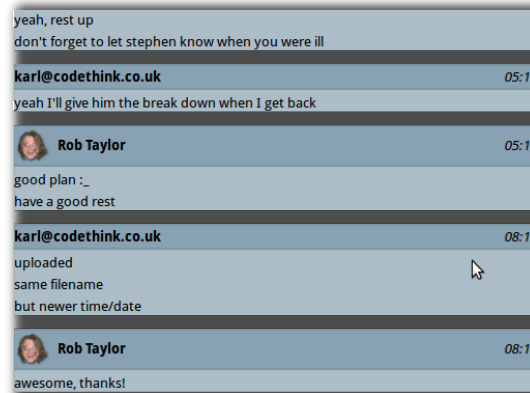
uploaded  
same filename  
but newer time/date



**Rob Taylor**

08:14

awesome, thanks!



	12	13
Conference San Francisco - ELC		Conference San Francisco - ELC
	19	20
		Meeting



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**karl@codethink.co.uk** 05:10

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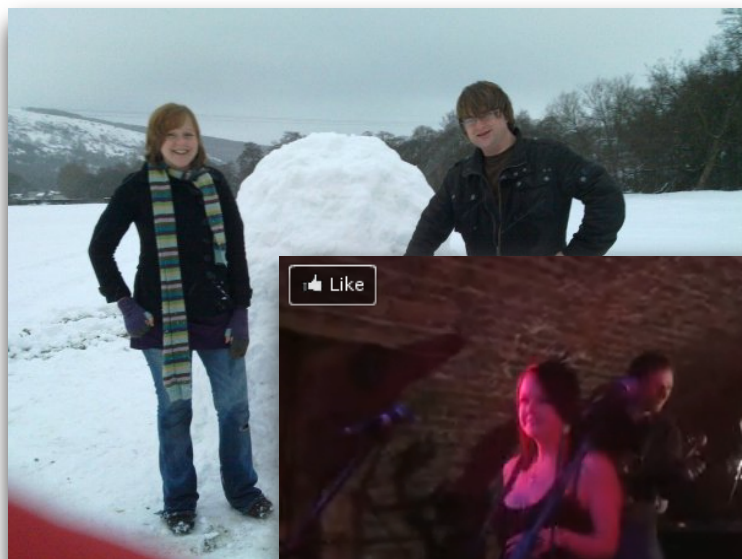
**karl@codethink.co.uk** 08:13

uploaded  
same filename  
but newer time/date

**Rob Taylor** 08:14

awesome, thanks!

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Conference San Francisco - ELC	Conference San Francisco - ELC	
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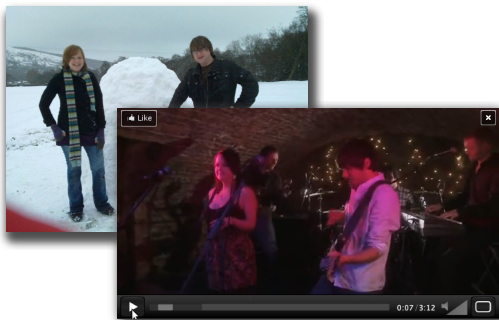
**karl@codethink.co.uk** 05:10  
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**karl@codethink.co.uk** 08:13  
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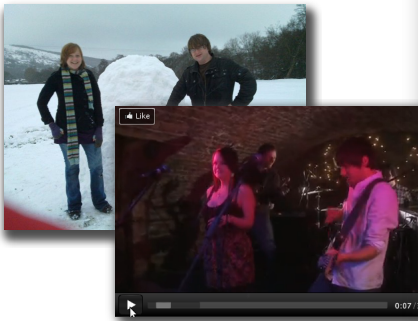
Rob Taylor 05:11


good plan :\_  
have a good rest

karl@codethink.co.uk 08:13

uploaded  
same filename  
but new time/date


	12	13
Conference San Francisco - ELC	Conference San Francisco - ELC	
	19	20
	Meeting	



**Address:** ☆ 

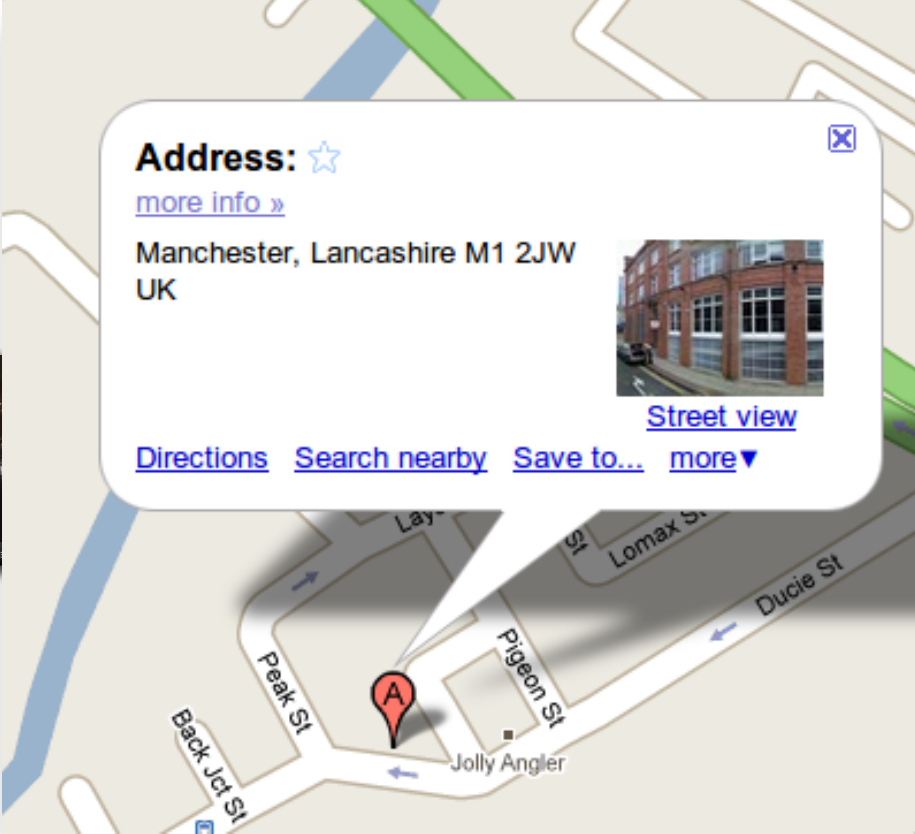
[more info »](#)

Manchester, Lancashire M1 2JW  
UK



[Street view](#)

[Directions](#) [Search nearby](#) [Save to...](#) [more ▼](#)





yeah, rest up  
don't forget to let stephen know when you were ill

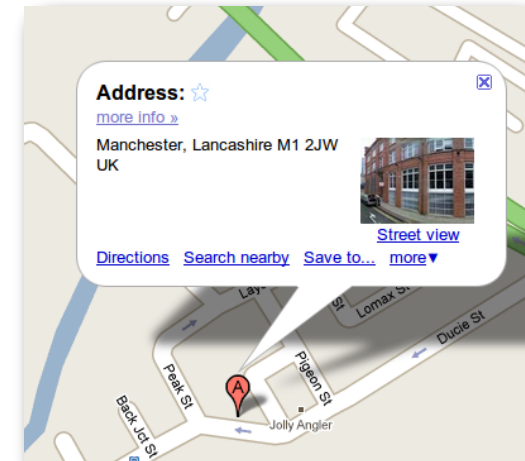
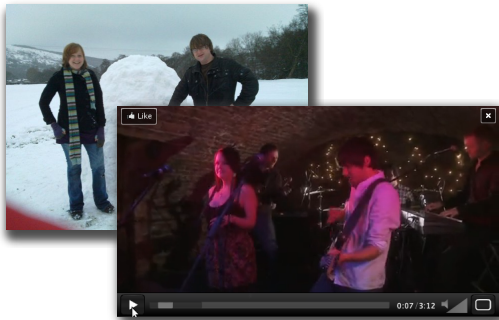
**karl@codethink.co.uk** 05:10  
yeah I'll give him the break down when I get back

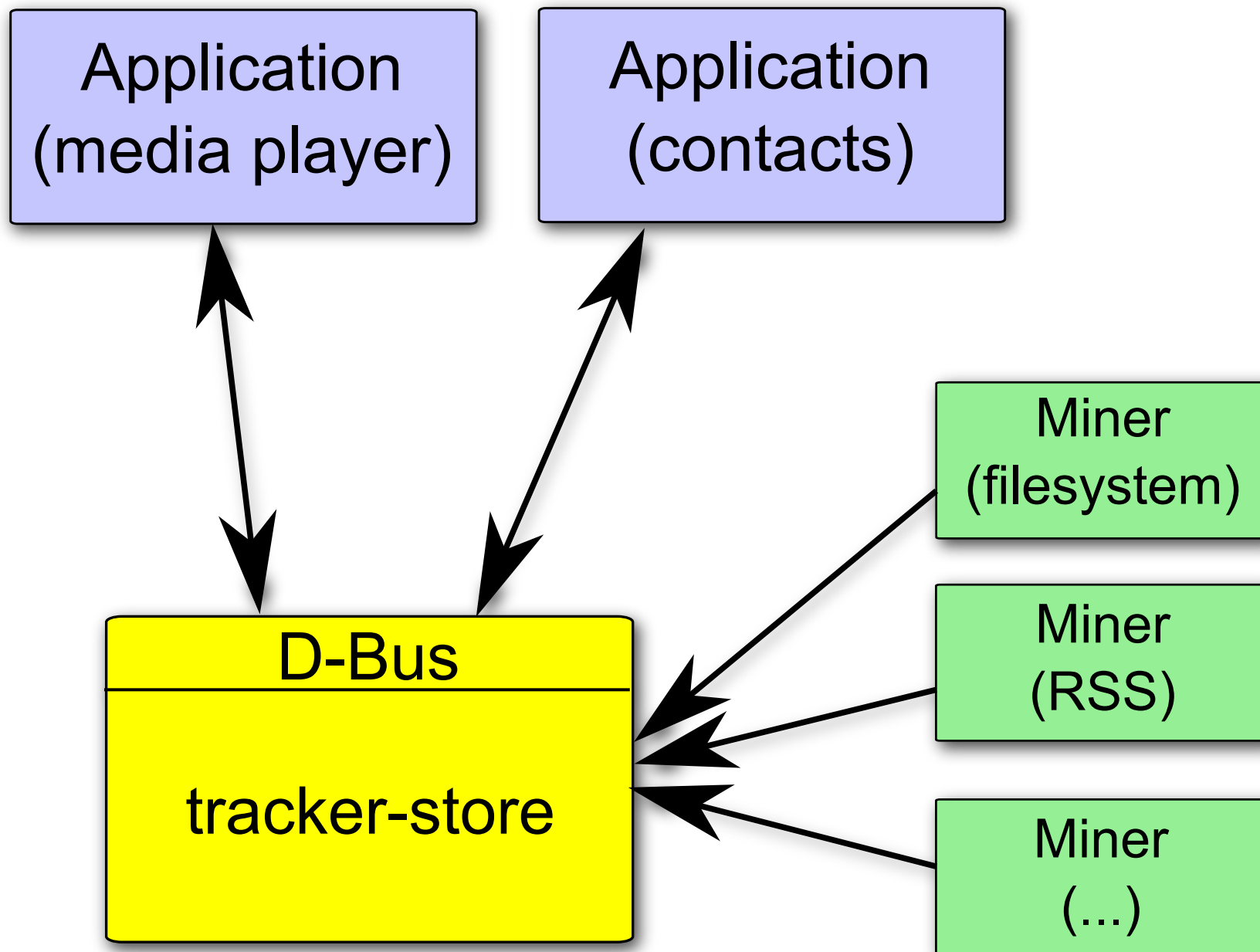
**Rob Taylor** 05:11  
good plan :\_  
have a good rest

**karl@codethink.co.uk** 08:13  
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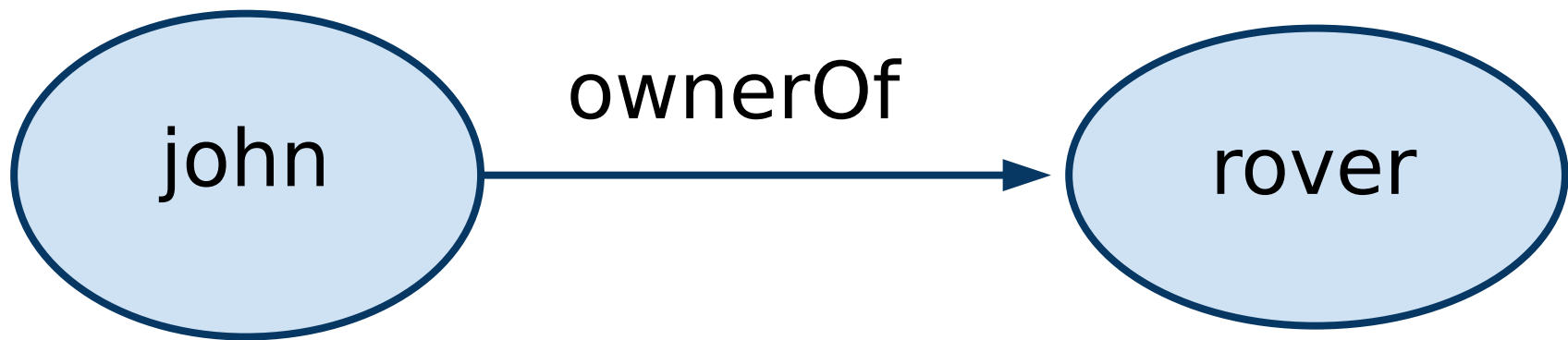




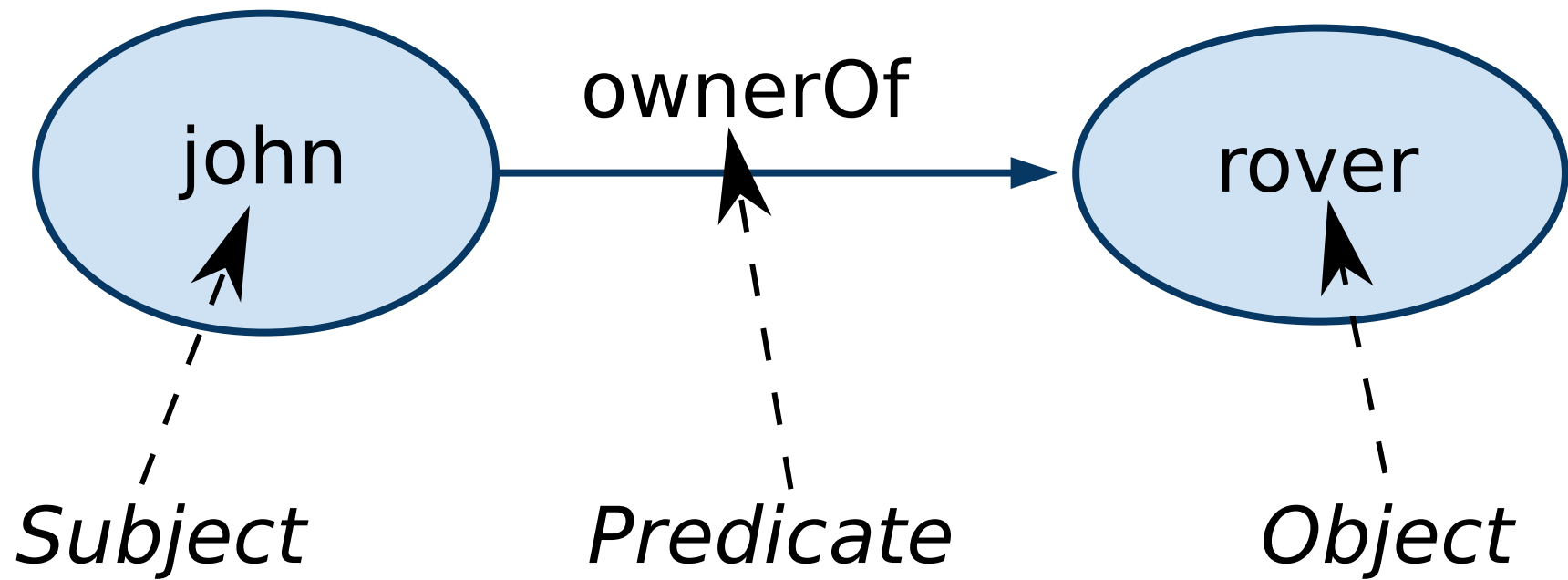




# RDF

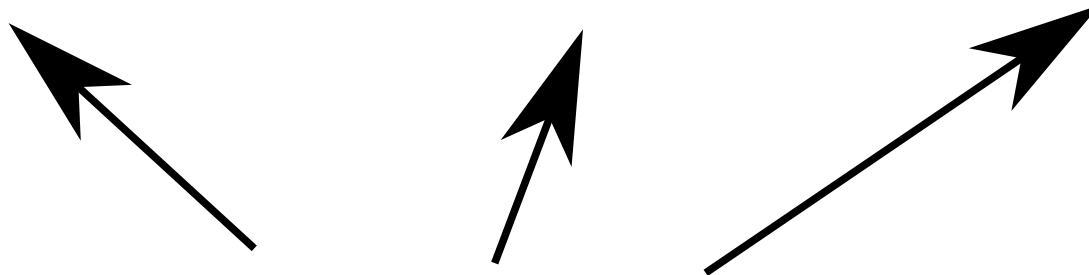


- an RDF *statement*



<john> <ownerOf> <rover>.

<john> <ownerOf> <rover>.



Reference

<john> <type> <Person>.

<rover> <type> <Dog>.

<john> <hasName> "John Doe".

<rover> <hasName> "Rover".

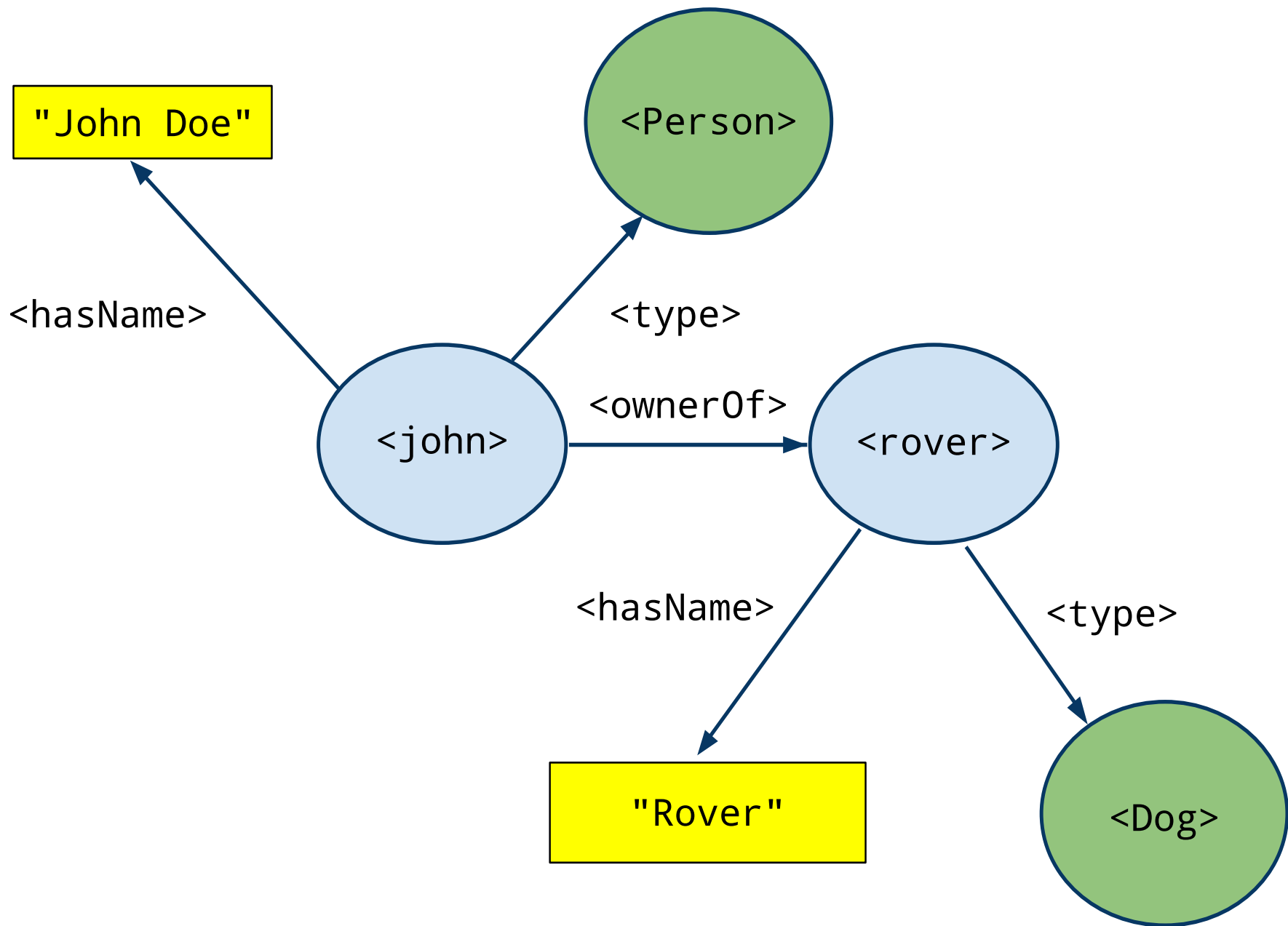
<john> <ownerOf> <rover>.

**Class**

**Literal**

<john> <type> <Person>.  
<rover> <type> <Dog>.  
<john> <hasName> "John Doe".  
<rover> <hasName> "Rover".  
<john> <ownerOf> <rover>.

**Instance**





<http://example.org/example#john>

<http://www.w3.org/1999/02/22-rdf-syntax-ns#type>

<http://example.org/example#Person>.

```
<http://example.org/example#john>  
  <http://www.w3.org/1999/02/22-rdf-syntax-ns#type>  
  <http://example.org/example#Person>.
```

**Or:**

```
@prefix example: <http://example.org/example#>.  
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>  
  
example:john rdf:type example:Person .
```

```
<http://example.org/example#john>  
  <http://www.w3.org/1999/02/22-rdf-syntax-ns#type>  
  <http://example.org/example#Person>.
```

**Or:**

```
@prefix example: <http://example.org/example#>.  
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>  
  
example:john rdf:type example:Person .
```

**Or:**

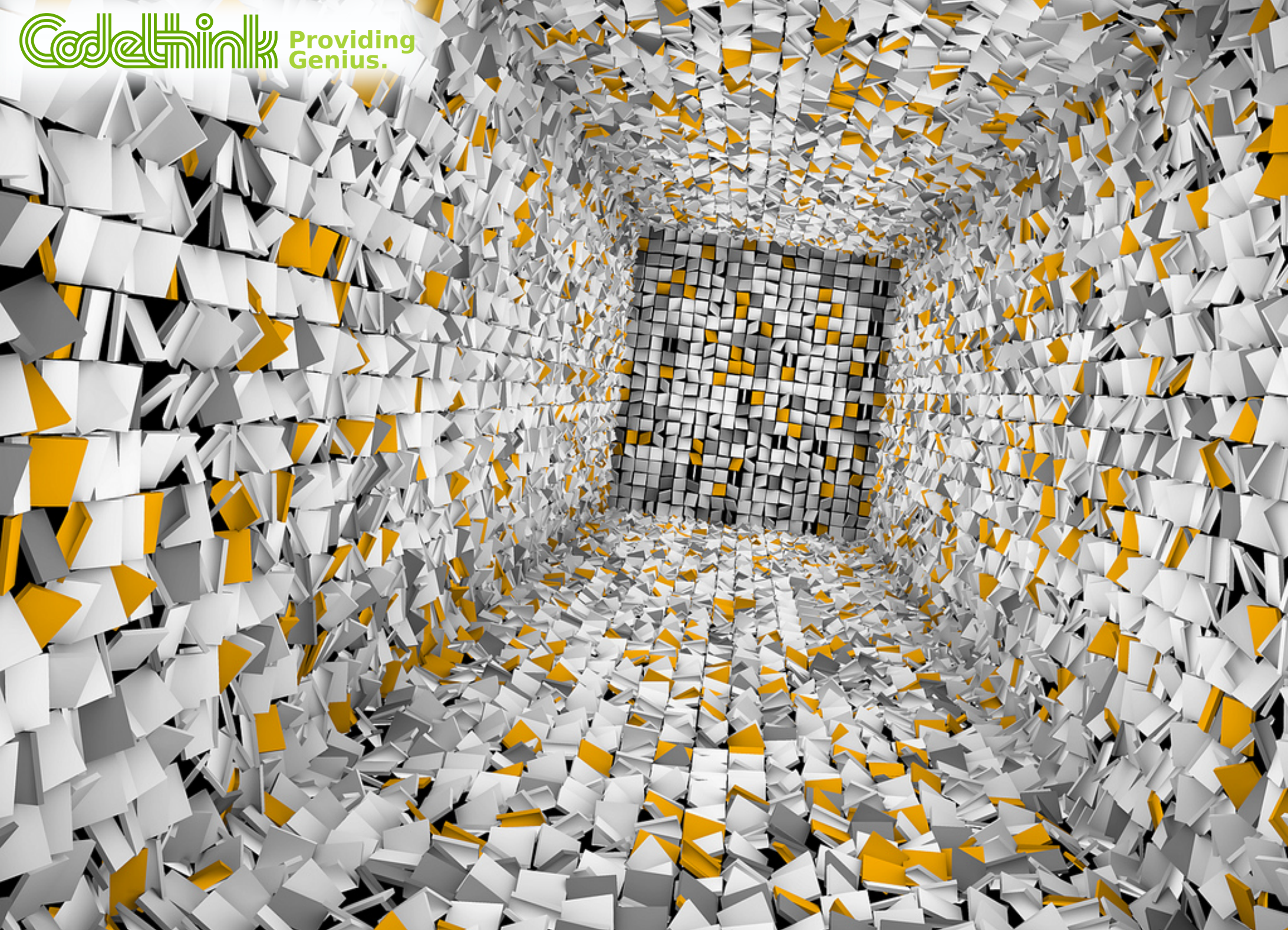
```
@prefix example: <http://example.org/example#>.  
  
example:john a example:Person .
```

```
@prefix example: <http://example.org/example#>.
```

```
example:john a example:Person ;  
             example:hasName "John Doe" ;  
             example:ownerOf example:rover> .
```

```
example:rover a example:Dog ;  
             example:hasName "Rover" .
```







## *Ontology!*

People have names

People can own some kinds of things

Pets can be owned

A dog is an pet

Dogs can have names

## *Ontology!*

People **have names**

People can own some kinds of things

Pets can be owned

A dog is an pet

Dogs can **have names**

## *Ontology!* - Names

```
example:Nameable a rdfs:Class.
```

```
example:hasName a rdf:Property;  
  rdfs:domain example:Nameable;  
  range string .
```



## *Ontology!*

People have names

People can own some kinds of things

Pets can be owned

A dog is an pet

Dogs can have names

## Ontology! - Ownership

```
example:Ownable a rdfs:Class .
```

```
example:ownerOf a rdf:Property;  
    rdfs:domain example:Person;  
    range example:Ownable .
```

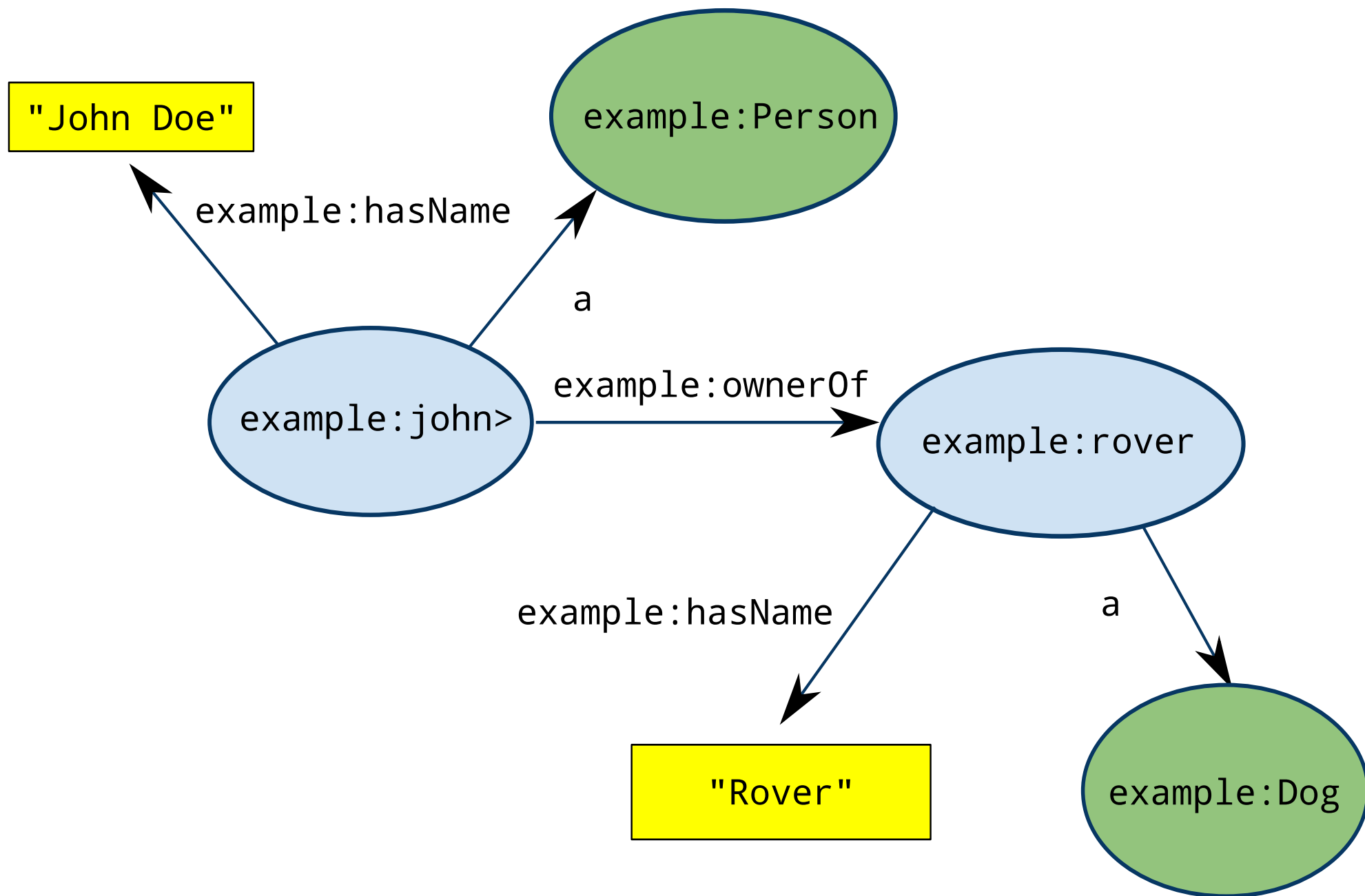
```
example:Pet a rdfs:Class ;  
    rdfs:subClassOf example:Ownable ;  
    rdfs:subClassOf example:Nameable .
```

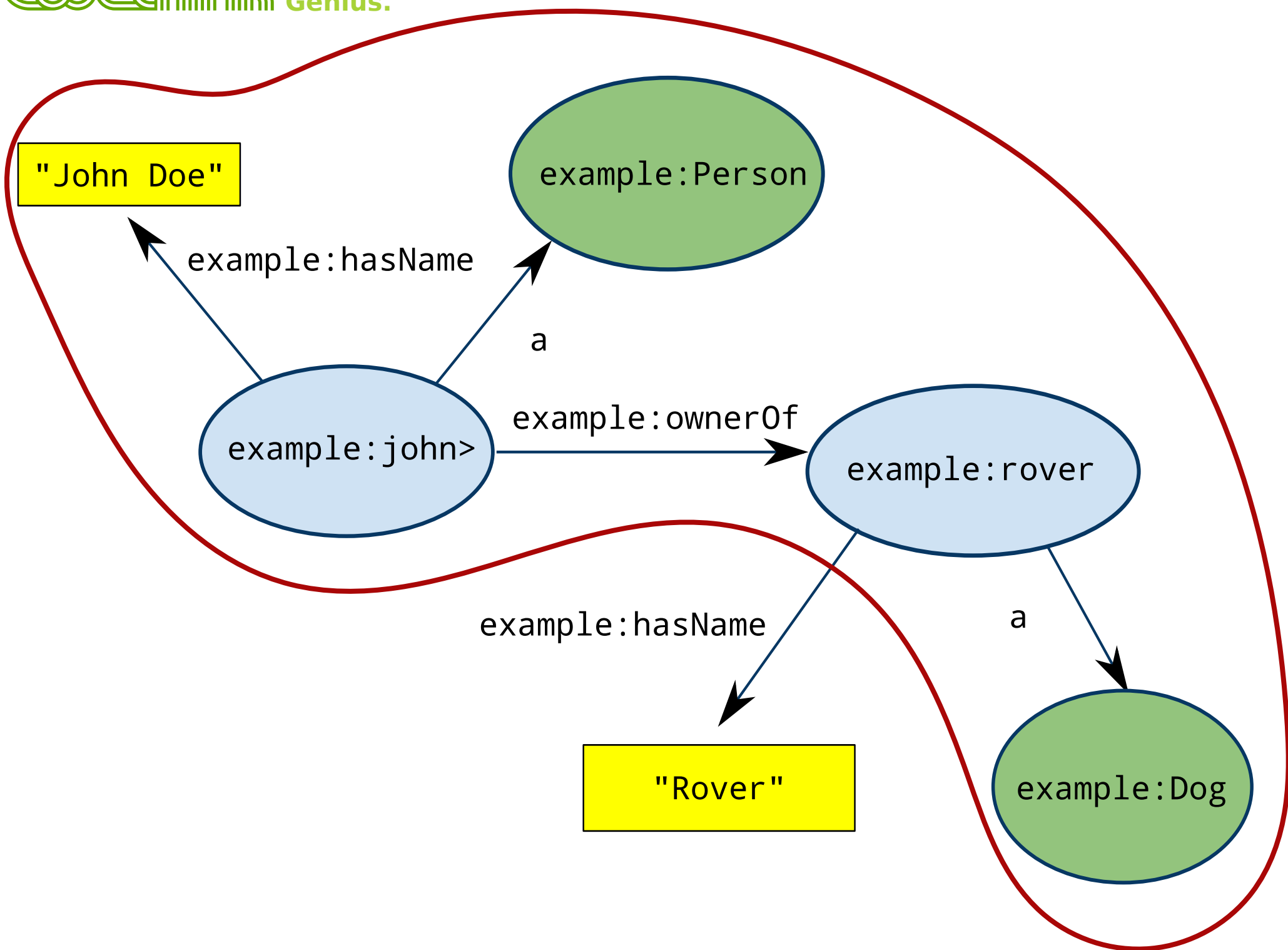
## *Ontology!* - Dogs and People

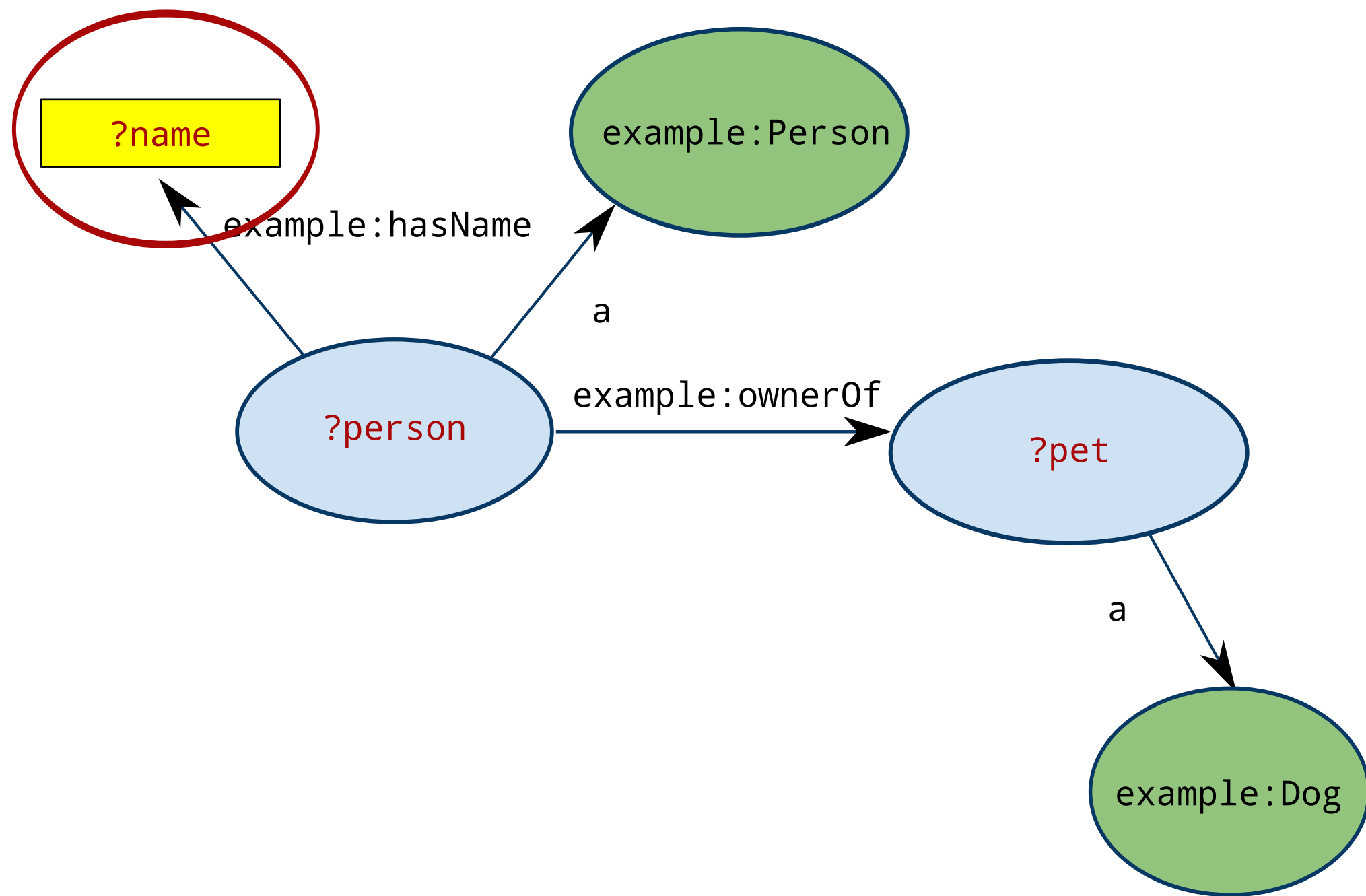
```
example:Dog a rdfs:Class ;  
           rdfs:subClassOf example:Pet .
```

```
example:Person a rdfs:Class ;  
              rdfs:subClassOf example:Nameable .
```









```
?person a example:Person ;  
        example:hasName ?name ;  
        example:ownerOf ?pet .
```

```
?pet a example:Dog .
```



```
SELECT ?name  
WHERE {
```

```
    ?person a example:Person ;  
             example:hasName ?name ;  
             example:ownerOf ?pet .
```

```
    ?pet a example:Dog .
```

```
}
```

```
SELECT ?name  
WHERE {
```

```
    ?person a example:Person ;  
            example:hasName ?name ;  
            example:ownerOf ?pet .
```

```
    ?pet a example:Dog .
```

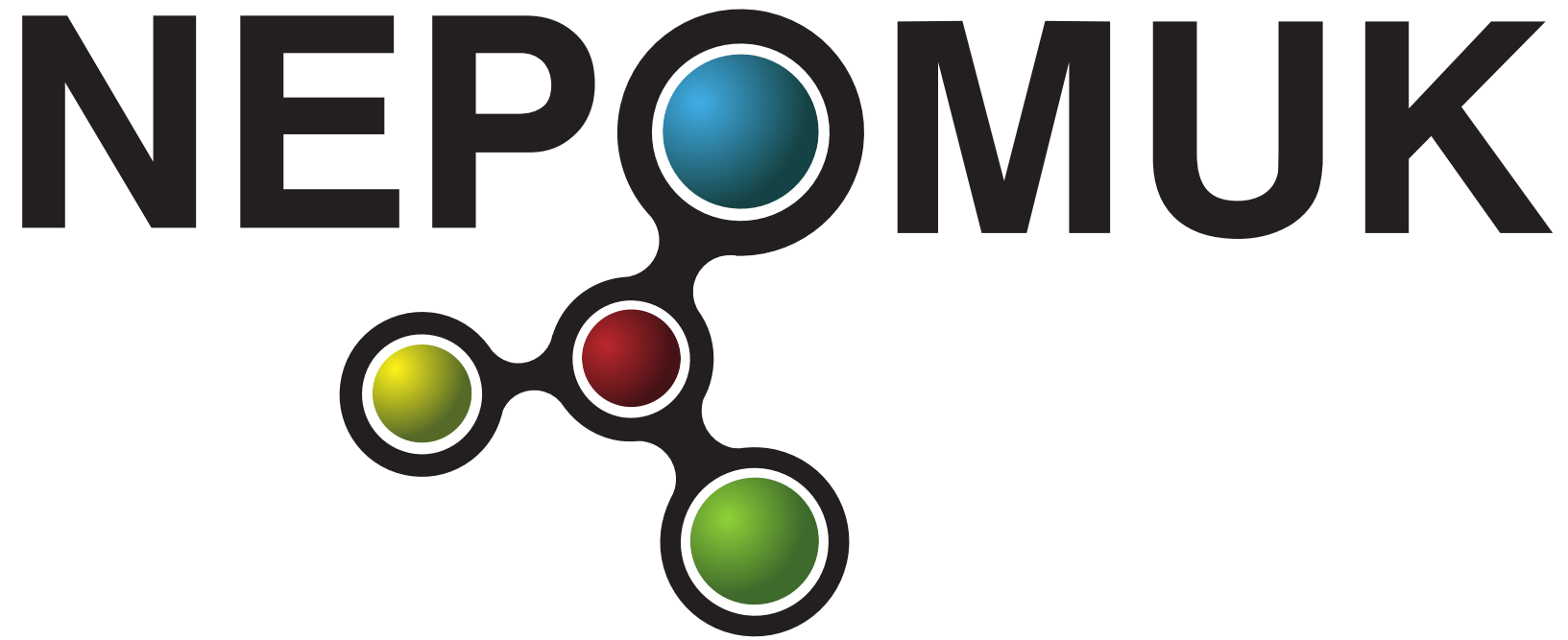
```
}
```

```
-> "John Doe"
```

All things RDF and SPARQL:

<http://www.w3.org/RDF>

The Social Semantic Desktop



**nmm:Artist**

**nmm:MusicPiece**

**nmm:MusicAlbum**

**nmm:artistName**

**nmm:performer**

**nie:title**

**nmm:albumArtist**

**nmm:musicAlbum**

```
$ tracker-sparql -q 'SELECT ?album WHERE \  
                        { ?album a nmm:MusicAlbum }'
```

Result: 2

urn:album:Thriller%20%28Special%20Edition%29

urn:album:Know%20The%20Joy%20Of%20Good%20Living

```
$ tracker-info urn:album:Know%20The%20Joy%20Of%20Good%20Living
```

```
Result: 10
```

```
'rdf:type' = 'rdfs:Resource'  
'rdf:type' = 'nie:InformationElement'  
'rdf:type' = 'nfo:MediaList'  
'rdf:type' = 'nmm:MusicAlbum'  
'tracker:added' = '2010-04-12T17:36:31Z'  
'tracker:modified' = '4667'  
'dc:title' = 'Know The Joy Of Good Living'  
'nie:title' = 'Know The Joy Of Good Living'  
'nmm:albumArtist' = 'urn:artist:Dead%20Like%20Harry'  
'nmm:albumTitle' = 'Know The Joy Of Good Living'
```



```
$ tracker-sparql -q \  
  'SELECT ?album ?title WHERE {  
    ?album a nmm:MusicAlbum;  
    nie:title ?title }'
```

Result: 2

```
urn:album:Thriller%20%28Special%20Edition%29, \  
  Thriller (Special Edition)
```

```
urn:album:Know%20The%20Joy%20Of%20Good%20Living, \  
  Know The Joy Of Good Living
```

```
$ tracker-sparql -q 'SELECT ?track ?trackname \
  WHERE { \
    ?track nmm:musicAlbum <urn:album:Thriller%20%28Special%20Edition%29>; \
    nie:title ?trackname; \
    nmm:trackNumber ?trackno} \
  ORDER BY (?trackno)'
```

Result: 21

```
urn:uuid:023e1756-a85a-0dd4-68ca-4bf083f13111, Wanna Be Startin 'Somethin'
urn:uuid:86a9cd20-8e32-9c4f-ffe8-5c3231cbc435, Baby Be Mine
urn:uuid:485018c8-ed69-b1d4-bb69-574da4df3f21, The Girl Is Mine
urn:uuid:40d64c12-0921-f821-1fe7-06ea379d4249, Thriller
urn:uuid:ade42900-669b-2d00-944f-42a1b97b4990, Beat It
urn:uuid:ecd8912b-d36d-73ef-562d-80907bb4ab30, Billie Jean
urn:uuid:9c8dc1dd-4ec4-0c08-965f-48bb5cfeda37, Human Nature
urn:uuid:3f36c87e-fa5c-157f-c40b-c4171c0b8efa, P. Y. T.
urn:uuid:f68467e9-c483-9c15-bc01-a3075be84ecc, The Lady In My Life
```

```
$ tracker-sparql -q 'SELECT ?url \
  WHERE { \
    ?track nmm:musicAlbum <urn:album:Thriller%20%28Special%20Edition%29>; \
    nmm:trackNumber 1; \
    nie:url ?url} '
```

Result: 1

```
file:///home/robtaylor/Downloads/Michael%20Jackson%20-%20Thriller%20\
(Special%20Edition)/01%20-%20Wanna%20Be%20Startin%20'Somethin'.mp3
```

# The Future?

- More sources
- Better developer APIs
- Security model
- Integrated web/device experiences

# Thank you!



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Genius

<http://www.codethink.co.uk>

<http://tracker-project.org>

IRC: #tracker on GIMPNet